

REMARKS

In order to place their application in condition for allowance Applicants' have amended their specification and drawings to correct typographical errors and omissions and have replaced all previously presented claims with a new set of more carefully drafted claims. Applicants submit that the replacement claims overcome all prior bases for claims rejection and more clearly define structural elements of their invention set forth in previously considered dependent claims. Accordingly, Applicants' respectfully request the Examiner's favorable consideration of the replacement claims and the passage of their application to issue.

Claim 21 is generic to all dependent claims 22-33 and all three embodiments of Applicants' invention. Moreover, claim 21 includes structural elements set forth in previously presented dependent claims that Applicants submit are not taught or suggested in any of the prior art references. To aide the Examiner in his reconsideration of the claimed combination and his review of Applicants' specification describing in detail the structure and operation of each embodiment of their invention, Each claim in the replacement set includes the specification and drawing number references to each specific element of the claimed combination in each of the three embodiments.

Basically, claim 21 defines a volume adjustable pipette (10;10';10") including a turnable volume adjusting member (33;33';33') that by turning controls both coarse and fine volume adjustment of the pipette. Such volume adjustment of the

pipette is only in response to the turning of the volume adjusting member and is through coarse volume setting means (34;34';34'') and fine volume setting means (35;35';35''). In order to more clearly define elements and operations of the structure set forth in the previously presented claims, claim 21 defines one of the coarse and fine volume setting means as "a one of the volume setting means" and the other of the coarse and fine volume setting means as "the other of the volume setting means". The one of the volume setting means is defined as being characterized by a force threshold (58;87;96) for its axial movement of the volume setting member (32;32';32'') that is exceeded by a predetermined movement of the other volume setting means in response to the turning of the volume adjusting member (see previously presented claims 1, 2, 3, 11 and 15). Further, claim 21 defines the volume adjustable pipette as including means (60,61;60',61';60'',61'') for overcoming the force threshold (58;87;96) in response to a turning of the volume adjusting member (see previously presented claims 8, 12, 16 and 20).

Applicants have carefully reviewed each of the previously cited references and can not find any teaching or suggestions in any of these references of a volume adjustable pipette including a coarse and a fine volume setting means, one of which is characterized by a force threshold for axial movement of a volume setting member that is exceed by a predetermined movement of the other of such volume setting means in response to a turning of a volume adjusting member. Moreover, Applicants review of the cited references has failed to reveal any

teachings or suggestions of means for overcoming such a force threshold in response to a turning of a volume adjusting member.

Accordingly, Applicants respectfully submit that generic claim 21 defines a structural combination that is neither anticipated nor rendered obvious by any of the cited references or any combination thereof. Therefore, Applicants submit that claim 21 and all claims dependent therefrom define patentably over all art of record and should be allowed.

More specifically, dependent claims 24 and 25 are directed to the embodiment of Applicants' volume adjustable pipette 10 illustrated in Figs. 1-8 and described fully at specification pages 9-24, while dependent claims 26-30 are directed to the embodiment of Applicants' volume adjustable pipette 10' illustrated in Figs. 9-14 and described fully at specification pages 30-37 and while dependent claims 31-33 are directed to the embodiment of Applicants' volume adjustable pipette 10" illustrated in Figs. 15-17 and described fully at specification pages 37-41 (as special version of the pipette 10' being illustrated and described with reference to Fig. 14). Those Figs. and specification pages fully describe the claimed structure and operation of the volume adjustable pipettes 10, 10' and 10" and fully support each of the dependent claims set forth in the replacement set of claims.

Accordingly, Applicants again submit that each of the claims in their replacement set of claims is fully supported by their patent application and define structure that is not anticipated or rendered obvious by any of the cited references.

Applicants therefore respectfully request allowance of each of their claims and earnestly solicit a passage to issue of their patent application.

Respectively submitted,



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IN THE DRAWINGS:

Amend Figs. 15 and 17 as indicated in the enclosed Replacement Sheets for Figs. 15-17. In Fig. 15, "10" has been changed to --10'-- and in Fig. 17, "84" has been changed to --84'-- and --60"-- has been added to Fig. 17.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: James S. Petrek et al

Serial No. 10/751,203

Art Unit No. 1743

Filed: 12/31/2002

Examiner: Brian R. Gordon

For: VOLUME ADJUSTABLE MANUAL PIPETTE WITH QUICK SET VOLUME  
ADJUSTMENT

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CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper and the documents referred to therein in the above-identified application are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.  
Express Mail Label ED 666 15383 US

JANET TERRA

7/8  
August 1, 2006

Janet Terra

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PETITION FOR EXTENSION OF TIME

As a small entity, Applicants petition for and enclose herewith the extension fee of \$510.00 relative to an extension of three (3) months time in which to file this amendment in response to the Office Action mailed February 21, 2006 and the Advisory Action Before the filing of an Appeal Brief, mailed July 17, 2006.

ROBERT R. MEADS  
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August 2, 2006

Robert R. Meads

SUPPLEMENTAL AMENDMENT

Mail Stop RCE  
Hon. Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action mailed February 21, 2006, and the Advisory Action Before the Filing of an Appeal Brief, mailed July 17, 2006, please consider the following amendments to claim 21 submitted in the Amendment After Final Rejection, mailed June 21, 2006, and please consider the following REMARKS in reply the 3.NOTE included in the Advisory Action.

IN THE CLAIMS:

21. (currently amended, previously presented and not entered) A volume adjustable pipette (10;10';10") comprising a housing (12), a plunger (20) mounted for axial movement in the housing to and from a stop (32s;32s';32s') during aspiration of a fluid into and dispensing of the fluid from a tip extending from the housing, an axially moveable volume setting member (32;32';32") in the housing defining the stop (32s; 32s'; 32s') for the plunger and a volume setting for the pipette, a turnable volume adjusting member (33;33';33') and volume adjusting means (22;22';22") in the housing for axially moving the volume setting member (32;32';32") in response to a turning of the volume adjusting member (33;33';33'), characterized by:

coarse volume setting means (34;34';34") and fine volume setting means (35;35';35") in the volume adjusting means (22;22';22") each responsive to a turning of the volume adjusting member (33;33';33') for axially moving the volume setting member (32;32';32"), the coarse and fine volume setting means respectively moving the volume setting member relatively large axial distances that are relatively large and small in response to relatively small and large turnings of the volume adjusting member (33;33';33');

~~fine volume setting means (35;35';35") in the volume adjusting means (22;22';22") responsive to a turning of the volume adjusting member (33;33';33') for axially moving the volume setting member (32;32';32") relatively small axial~~

~~distances in response to relatively large turnings of the volume adjusting member (33;33';33');~~

one of the coarse and fine volume setting means (34,34';35,35';35") defining a ~~one of the volume setting means~~ and the other of the coarse and fine volume setting means defining an other of the volume setting means, the one of the volume setting means being characterized by a force threshold (58;87;96) for axial movement of the volume setting member (32;32';32") by the one of the coarse and fine volume setting means that is exceeded by a predetermined movement of the other of the coarse and fine volume setting means in response to a turning of the volume adjusting member (33;33';33'); and

means (60,61;60',61,61';60",61") for overcoming the force threshold (58;87;96) in response to a turning of the volume adjusting member (33;33';33').

22. (previously presented and not entered) The pipette (10;10') of claim 21 further including means (16,75) for monitoring the position of the plunger (20) within the housing (12).

23. (previously presented and not entered) The pipette (10;10') of claim 21 further including means (16,75,42) for monitoring the position of the volume setting member (32) within the housing (12).

24. (previously presented and not entered) The pipette (10) of claim 21 wherein:

the coarse volume setting means (34) includes a relatively coarse thread (53t) on an axially extending screw (52) carried by the volume setting member (32); and

the fine volume setting means (35) comprises a relatively fine thread (51t) on the screw (52) and a relatively fine thread (49t) on a sleeve (44) comprising the volume adjusting member (33) and which engages the relatively fine thread (51t) on the screw (52).

25. (previously presented and not entered) The pipette (10) of claim 24 further comprising:

a fine adjustment limiter (60) on one of the volume adjusting member (33) or screw (52); and

a shoulder (61) on another of the volume adjusting member (33) or screw (52) for engaging the limiter whereby a turning of the volume adjusting member (33) with the limiter against the shoulder produces a turning of the screw (52) with the volume adjusting member (33).

26. (previously presented and not entered) The pipette (10';10") of claim 21 further comprising:

a gear mechanism (22';22") between the volume adjusting member (33'; 33') and the volume setting member (32';32") and responsive to a turning of the volume adjusting member (33';33') to selectively produce a relatively small axial movement of the volume setting member through the fine volume setting means (35';35") and responsive to a turning of the volume adjusting

member (33';31') to produce a relatively large axial movement of the volume setting member (32';32") through the coarse volume setting means (34';34").

27. (previously presented and not entered) The pipette (10') of claim 26 wherein:

the volume setting member (32') comprises an axially extending screw (52') having a relatively coarse thread (53t); and

the gear mechanism (22') comprises a planetary gear mechanism including

a planetary gear carrier (82) on the screw (52') comprising the volume setting member (32'),

a plurality of circumferentially spaced planetary gears (83) on the carrier separately mating with an outer ring gear (84) and

an inner sun gear (81) carried by the volume adjusting member (33') mating with the plurality of planetary gears (83) to produce a turning of the sun gear, planetary gears and volume setting member (32') in response to a turning of the volume adjusting member (33') to adjust the volume setting of the pipette.

28. (previously presented and not entered) The pipette (10') of claim 27 wherein one of the coarse (34') or fine (35') volume setting means is characterized by a force threshold for movement of the volume setting member (32') by the one of the

coarse (34') or fine (35') volume setting means which is exceeded by a predetermined movement of the other of the coarse or fine volume setting means by the volume adjusting member (33').

29. (previously presented and not entered) The pipette (10') of claim 28 further comprising:

a gear housing (85);  
a fine adjustment limiter (60') on a one of the volume adjusting member (33') or a gear housing (85); and  
a shoulder (61) on another of the volume adjusting member (33') or gear housing (85) for engaging the limiter whereby a turning of the volume adjustment member (33') with the limiter against the shoulder produces a turning of the ring gear (84) with the planetary gears (83) and carrier (82) to turn the volume setting member (32') thereby adjusting the volume setting for the pipette.

30. (previously presented and not entered) The pipette (10') of claim 29 further comprising a counter wheel (90) for turning with the volume setting member (32') to indicate the volume setting of the pipette.

31. (previously presented and not entered) The pipette (10") of claim 26 wherein:

the coarse volume setting means (34") includes a thread (53t") on an axially extending screw (52") comprising the volume setting member (32"); and

the gear mechanism (22') comprises a planetary gear mechanism including

a planetary gear carrier (82') on the screw (52"),

a plurality of circumferentially spaced planetary gears (83') on the carrier (82') separately mating with an outer ring gear (84') coupled to the carrier and

an inner sun gear (81') carried by the volume setting member (32") mating with the plurality of planetary gears (83') to produce a turning of the sun gear, planetary gears and volume setting member in response to a turning of the volume adjusting member (33') to adjust the volume setting of the pipette.

32. (previously presented and not entered) The pipette (10") of claim 31 further comprising:

a gear housing (85'):

a fine adjustment limiter (60") on one of the housing (85') or ring gear (84'); and

a shoulder (61") on another of the housing (85') or ring gear (84') for engaging the limiter (60") whereby a turning of the volume adjustment member (33') with the limiter against the shoulder produces a turning of the ring gear (84') with the planetary gears (83') and carrier (82') to turn the volume

setting member (32") thereby adjusting the volume setting for the pipette.

33. (previously presented and not entered) The pipette (10") of claim 32 further comprising counter wheel means (100,102,104) for turning with the volume setting member (32") to indicate the volume setting of the pipette.

REMARKS

In response to the Examiner's comments contained in 3.NOTE of the Advisory Action Before the Filing of an Appeal Brief, mailed July 17, 2006, Applicants have amended independent claim 21 presented in the Amendment After final Rejection mailed June 21, 2006. It is submitted that claims 21 as amended addresses all of the relevant issues raised by the Examiner and is in condition for allowance along with all of the claims 22-33 dependent directly or indirectly from amended claim 21.

Specifically, amended claim 21 clearly specifies that it is one of the coarse and fine volume setting means (e.g. the coarse volume setting means) that is characterized by a force threshold for axial movement of the volume setting member by the one of the coarse and fine adjustment means (e.g. the coarse volume setting means) and that the force threshold is exceeded by a predetermined movement of the other of the coarse and fine volume setting means (e.g. the fine volume setting means) in response to a turning of the volume adjusting member.

Amended claim 21 also defines the relatively large and small axial movements of the volume setting member provided respectively by the coarse and fine volume setting means as being in respective response to relatively small and large turnings of the volume adjusting member.

As repeatedly explained in Applicants' specification, e.g. page 10, line 13 - page 11, line 14 and page 11, line 15-page 18, line 10, the axial movement of the volume setting member in response to the coarse volume setting means is large relative to

the axial movement of the volume setting member in response to the fine volume setting means and conversely, the axial movement of the volume setting member in response to the fine volume setting means is small relative to the axial movement of the volume setting member in response to the coarse volume setting means. Further, the turning of the volume adjusting member to produce the relatively large axial movement of the volume setting by the coarse volume setting means (coarse volume adjustment) is small relative to the turning of the volume adjusting member to produce the relatively small axial movement of the volume setting member by the fine volume setting means (fine volume adjustment) and conversely, the turning of the volume adjusting member to produce the relatively small axial movement of the volume setting by the fine volume setting means (fine volume adjustment) is large relative to the turning of the volume adjusting member to produce the relatively large axial movement of the volume setting member by the coarse volume setting means (coarse volume adjustment). Applicants submit that the wording of amended claim 21 in these regards is fully consistent with their specification, such as the portions specifically noted above for the first embodiment of the present invention shown in Figs. 1-6.

Amended claim 21 is generic to all dependent claims 22-33 and all three embodiments of Applicants' invention. Moreover, amended claim 21 includes structural elements set forth in previously presented dependent claims that Applicants submit are not taught or suggested in any of the prior art references. As

previously noted in the Amendment After Final Rejection, to aide the Examiner in his reconsideration of the claimed combination and his review of Applicants' specification describing in detail the structure and operation of each embodiment of their invention, each claim in the replacement set includes the specification and drawing number references to each specific element of the claimed combination in each of the three embodiments.

Applicants have carefully reviewed each of the previously cited references and can not find any teaching or suggestions in any of these references of a volume adjustable pipette including a coarse and a fine volume setting means responsive only to a turning of a volume adjusting member, one the coarse and fine volume setting means being characterized by a force threshold for axial movement of a volume setting member that is exceed by a predetermined movement of the other of such volume setting means in response to a turning of the volume adjusting member. Moreover, Applicants review of the cited references has failed to reveal any teachings or suggestions of means for overcoming such a force threshold in response to a turning of a volume adjusting member.

Accordingly, Applicants respectfully submit that amended generic claim 21 defines a structural combination that is neither anticipated nor rendered obvious by any of the cited references or any combination thereof. Therefore, Applicants submit that amended claim 21 and all claims 22-33 dependent

directly or indirectly from amended claim 21 define patentably over all art of record and should be allowed.

More specifically, dependent claims 24 and 25 are directed to the embodiment of Applicants' volume adjustable pipette 10 **illustrated in Figs. 1-8 and described fully at specification pages 9-24**, while dependent claims 26-30 are directed to the embodiment of Applicants' volume adjustable pipette 10' **illustrated in Figs. 9-14 and described fully at specification pages 30-37** and while dependent claims 31-33 are directed to the embodiment of Applicants' volume adjustable pipette 10" **illustrated in Figs. 15-17 and described fully at specification pages 37-41** (a special version of the pipette 10' being **illustrated and described with reference to Fig. 14**). Those Figs. and specification pages fully describe the claimed structure and operation of the volume adjustable pipettes 10, 10' and 10" and fully support amended generic claim 21 and each of the dependent claims set forth in the replacement set of claims.

More specifically, as to the Examiner's comments set forth in 3.NOTE of the July 17, 2006 Advisory Action relative to Applicants' Amendment After Final Rejection, Applicants respectfully submit that the previous version of claim 7 did indicate that the coarse and fine volume setting means is located in the housing. Further, as specified at page 26 of the Amendment After Final Rejection, previous claims 3, 11 and 15 and previous claims 8, 12, 16 and 20 include means for overcoming a force threshold. As to the means for overcoming such a force

threshold, page 27 of the Amendment After Final Rejection refers to claims 24, 25 and 26-30 and 31-33 that each define such a means for overcoming the force threshold and reference the specification pages that support such means for overcoming the force threshold.

Accordingly, **Applicants again submit that each of the claims in their replacement set of claims is fully supported by their patent application and define structure that is not anticipated or rendered obvious by any of the cited references.** Applicants therefore respectfully request allowance of each of their claims and earnestly solicit a passage to issue of their patent application.

Respectively submitted,



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